

**Epstein, D.M., J. Harris, R. Jackson, S.H. Swan, T. Anderson, L. Headley, R. Snow and P. Stephenson (1982). Congenital malformations reported on the California certificate of birth: Some observations of urban and rural differences in rates of congenital malformations, California Department of Health Services.**

**EXECUTIVE SUMMARY:**

Based on 1968-1980 birth certificate data, congenital malformation rates have been higher in rural areas of California than in urban areas (1981 and 1982 data are not yet available for analysis). From 1978 to 1980 there was a gradient between urban, semi-rural and rural counties in California, i.e., the lesser the percent urban, the higher the reported rate of congenital malformations. Furthermore, from 1978 to 1980, hospital size, age of the mother, and length of prenatal care do not appear to explain the differences in malformation rates, calculated from birth certificate data, among rural, semi-rural and urban California counties.

The reasons for these apparent differences in congenital malformation rates are uncertain but likely explanations include:

1. A systematic bias in reporting of malformations on the birth certificate in rural, semi-rural and urban California counties; that is, rural health care providers are more likely to detect or to report malformations on the birth certificates.
2. An unmeasured factor, such as socioeconomic status (income, education, occupation) is a confounder.
3. A genuinely increased risk of developing congenital malformations in rural counties compared to urban counties for any of the following reasons:
  - a) differences in racial or genetic make-up,
  - b) differences in personal habits including smoking, drinking, use of medicines and other drugs, dietary intake, etc.,
  - c) differences in exposure to exogenous agents, such as infectious agents or pesticides.

Further analyses of currently available data is unlikely to provide additional useful information in evaluating the apparent urban-rural gradient. Options for further investigation are presented in the section entitled "Options for Response", page 20.